

09/929434

## DISCRETE SOLDER BALL CONTACT AND CIRCUIT BOARD ASSEMBLY UTILIZING SAME

### ABSTRACT OF THE DISCLOSURE

Upper and lower planar circuit boards are connected in spaced apart parallel relationship by a plurality of contacts each made of a conductive pin, insulative collar and solder ball. The upper ends of the pins are inserted in plated through holes in the upper circuit board and soldered thereto by wave soldering or re-flow. The pins have shoulders to establish the penetration of the pins into the upper circuit board. The lower ends of the pins are bonded to conductive pads on the lower circuit board via the solder balls that are maintained in substantially round configuration by the insulative collars and accommodate variations in board co-planarity or pin length. Where the lower ends of the pins do not contact their corresponding conductive pads the volume of solder in the solder balls allows reliable fillet solder joints to be formed.

U.S. PATENT OFFICE